

ENVIRONMENTAL QUALITY

CHAPTER 57

ABOVEGROUND STORAGE TANKS

Sub-Chapter 1

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## Sub-Chapter 1

Aboveground Double-Walled  
Petroleum Storage Tank Systems

17.57.101 PURPOSE (1) The purpose of these rules is to establish minimum design, construction, and installation standards for aboveground double-walled petroleum storage tank systems, other similarly constructed and equally protected aboveground petroleum storage tank systems, and all associated on-site double-walled integral piping systems owned or operated by persons that want to qualify for a reduced deductible under the statutes and rules governing the Montana petroleum tank release cleanup fund.

(2) These standards will provide the petroleum tank release compensation board with criteria to evaluate eligibility for 100% reimbursement of expenses associated with accidental releases of petroleum product from aboveground double-walled or equally protected aboveground petroleum storage tank systems.

(3) These rules are not intended to supersede or to replace any fire or life-safety rules duly adopted by the department of justice fire prevention and investigation bureau which regulate the installation, operation, or management of aboveground petroleum storage tank systems.

(4) The department does not intend to use these rules for regulatory purposes. (History: 75-11-319, MCA; IMP, 75-11-308, 75-11-319, MCA; NEW, 1995 MAR p. 2491, Eff. 11/23/95.)

17.57.102 APPLICABILITY (1) This chapter applies to all aboveground double-walled petroleum storage tank systems with maximum storage capacities of less than 30,000 gallons that are used to store petroleum or petroleum product and are owned or operated by persons seeking 100% reimbursement of eligible expenses from the petroleum tank release compensation fund pursuant to Title 75, chapter 11, part 3, MCA, "Petroleum Storage Tank Cleanup". (History: 75-11-319, MCA; IMP, 75-11-308, 75-11-319, MCA; NEW, 1995 MAR p. 2491, Eff. 11/23/95.)

17.57.103 DEFINITIONS In addition to the definitions contained in 75-11-302, MCA, the following words, phrases, or terms shall have the following meaning in this chapter, unless the context indicates otherwise:

(1) "Aboveground storage tank system" or "AST" means any one or a combination of tanks used to contain an accumulation of petroleum or petroleum product that is 90% or more above the soil surface. AST includes integral piping located aboveground and petroleum storage tanks located in an enclosed liquid/vapor-tight vault or "special enclosure" designed and constructed in accordance with section 5202.3.6 of the Uniform Fire Code or a "listed" fire protected aboveground storage tank assembly which complies with Uniform Fire Code Appendix II-F.

(2) "Cathodic protection" means the prevention of corrosion of a metallic surface by making that surface the cathode of an electrochemical cell through the use of galvanic anodes, impressed currents, or other similar methods.

(3) "Compatible" means certified as adequate and safe for the storage and delivery of petroleum products by a nationally recognized independent laboratory or organization competent to provide such certification.

(4) "Corrosion expert" means a person with knowledge of physical sciences and principles of engineering and mathematics acquired through education and related practical experience who is qualified to engage in the control of corrosion on buried or submerged metal piping systems and metal tanks and is either accredited or certified by the national association of corrosion engineers or a registered professional engineer certified or licensed to conduct corrosion control of buried or submerged metal piping systems and metal tanks.

(5) "Department" means the department of environmental quality.

(6) "Double-walled tank system" means a petroleum storage tank and associated piping designed and constructed with rigid inner and outer walls separated by an interstitial space that is monitored for a release.

(7) "In contact with the soil" means a portion of a tank or integral piping physically touched by soil or separated from the soil by only a casing, wrapping, or a pervious structure.

(8) "Integral piping" means all continuous, on-site piping until the union of the piping and dispensing equipment and all other valves, elbows, joints, flanges, and flexible connectors attached to a petroleum storage tank system through which petroleum or petroleum product flows.

(9) "Liner" means an impervious material used as a method of secondary containment to prevent a release of any petroleum or petroleum product from a petroleum storage tank system. The defined term does not include interior tank linings or exterior tank coatings.

(10) "Overfill" means a release of petroleum or petroleum product that occurs when an aboveground tank is filled beyond maximum capacity.

(11) "Petroleum storage tank" means a tank that contains or contained petroleum or petroleum product and that is:

(a) an aboveground storage tank situated in an underground area such as a basement, cellar, mine, drift, shaft, or tunnel;

(b) an aboveground storage tank situated inside a vault or special enclosure as set forth in section 5202.3.6 and Appendix II-F of the Uniform Fire Code;

(c) an aboveground storage tank with a capacity of less than 30,000 gallons; or

(d) aboveground pipes associated with tanks under (a)-(c) of this definition, except pipelines regulated under the following laws:

(i) the Natural Gas Pipeline Safety Act of 1968 (49 USC 1671, et seq.);

(ii) the Hazardous Liquid Pipeline Safety Act of 1979 (49 USC 2001, et seq.); and

(iii) state law comparable to the provisions of law referred to in (i) and (ii) above.

(12) "Pipe" means any hollow cylindrical or tubular conveyance constructed of approved non-earthen materials (e.g., cathodically protected metal, plastic or fiberglass) through which petroleum and petroleum product is designed to flow. No nonmetallic pipe shall be installed aboveground unless provided with 2 hours of fire protection.

(13) "Release detection" means a method of detecting whether a release of petroleum or petroleum product occurred from the petroleum storage tank system into the environment or into the secondary containment.

(14) "Rigid" means an intrinsic characteristic which allows a material to maintain a pre-formed shape or configuration without internal or external support.

(15) "Secondary containment" means any approved system used to provide release detection and release prevention. Examples of secondary containment include an approved double-walled tank, an approved double-walled integral piping system, or an approved single-walled tank or integral piping system that is protected by an enclosed concrete vault or special enclosure as required by the uniform fire code.

(16) "Shop-fabricated storage tank" means a listed storage tank constructed at the tank manufacturer's plant according to approved standards and accepted engineering principles and transported to the facility for installation.

(17) "Storage tank system" means an approved aboveground petroleum storage tank and all associated integral piping and release detection components.

(18) "Tank" means an enclosed aboveground stationary

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device, no more than 10% of which is located beneath the surface of the ground, constructed of approved non-earthen materials that provide structural support and designed to store petroleum or petroleum product. (History: 75-11-319, MCA; IMP, 75-11-308, 75-11-319, MCA; NEW, 1995 MAR p. 2491, Eff. 11/23/95.)

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12/31/95 ADMINISTRATIVE RULES OF MONTANA

17.57.104 STANDARDS INCORPORATED BY REFERENCE

(1) Referenced standards are available for inspection at the Department of Justice Fire Prevention and Investigation Bureau, Scott Hart Building, the Montana Department of Environmental Quality, Metcalf Building, Helena, Montana, and from the following sources:

(a) American Petroleum Institute (API), 1220 L Street NW, Washington, DC 20037, (202)682-8372;

(b) National Association of Corrosion Engineers (NACE), 1440 South Creek Drive, PO Box 218340, Houston, TX 77218, (713)492-0525;

(c) National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269, (800)344-3555;

(d) Steel Tank Institute (STI), 570 Oakwood Road, Lake Zurich, IL 60047, (708)438-8265;

(e) Underwriters Laboratories (UL), 333 Pfingsten Road, Northbrook, IL 60062, (708)272-8800;

(f) Western Fire Chiefs Association (WFCA), 5360 South Workman Mill Road, Whittier, CA 90601, (301)699-0124;

(g) petroleum equipment institute (PEI), PO Box 2380, Tulsa, OK 74101-2380, (918)494-9696; and

(h) International Conference of Building Officials (ICBO), 5360 South Workman Mill Road, Whittier, CA 90601, (301)699-0541.

(2) For purposes of this chapter, the department hereby adopts and incorporates by reference each of the following:

(a) The following published by the American petroleum institute:

(i) Specification No. 12B, "Specification for Bolted Tanks for Storage of Production Liquids" 1977, 12th edition, as supplemented January, 1982;

(ii) Specification No. 12D, 1982, as supplemented in 1985, "Specification for Field Welded Tanks for Storage of Production Liquids", ninth edition;

(iii) Specification No. 12F, 1982 as supplemented in 1988, "Specification for Shop Welded Tanks for Storage of Production Liquids", tenth edition;

(iv) Specification No. 12P, September 1, 1986, "Specification for Fiberglass Reinforced Plastic Tanks", first edition;

(v) Standard No. 620, 1985, "Recommended Rules for Design and Construction of Large Welded Low-Pressure Storage Tanks", eighth edition;

(vi) Standard No. 650, 1988, "Welded Steel Tanks for Oil Storage", eighth edition;

(vii) RP 651, (Draft-October 1990), "Cathodic Protection of Aboveground Petroleum Storage Tanks";

(viii) RP 652, (Draft-October 1990), "Lining of Aboveground Petroleum Storage Tanks";

(ix) Standard No. 653, (Draft-October 1990), "Tank

Inspection, Repair, Alteration and Reconstruction", first edition;

(x) Publication No. 1110, 1981, "Recommended Practice for the Pressure Testing of Liquid Petroleum Pipelines";

(xi) RP 1615, 1987, "Installation of Underground Petroleum Storage Systems";

(xii) RP 1632, 1987, as supplemented in March 6, 1989, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems"; and

(xiii) RP 2350, March, 1987, "Overfill Protection for Petroleum Storage Tanks".

(b) The following published by the national association of corrosion engineers:

(i) Standard No. RP-0169-83 "Control of External Corrosion on Underground or Submerged Metallic Piping Systems" (1983); and

(ii) Standard No. RP-0285-95 "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems" (1985).

(c) The national fire protection association's: Standard No. 31, "Installation of Oil-Burning Equipment", 1987 edition.

(d) The steel tank institute's R892-89, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems".

(e) The following published by underwriters laboratories:

(i) Specification 142 "Steel Aboveground Tanks for Flammable and Combustible Liquids", 7th edition (April 1, 1993);

(ii) Standard 567, "Pipe Connectors for Flammable, Combustible and LP Gas";

(iii) UL Subject 971, "UL Listed Non-metal Pipe"; and

(iv) UL 2085, 1994, "Insulated Aboveground Tanks for Flammable and Combustible Liquid".

(f) Uniform Fire Code (UFC), the most recent edition adopted by the fire prevention and investigation bureau.

(g) The petroleum equipment institute's standard RP200-92, "Recommended Practice for the Installation of Aboveground Storage Systems for Motor Vehicle Fueling".

(h) Uniform Mechanical Code, the most recent edition adopted by the department of commerce, building codes bureau.

(3) The documents incorporated by reference in (2) above may be obtained at the Department of Justice Fire Prevention and Investigation Bureau, Scott Hart Building, and the Montana Department of Environmental Quality, PO Box 200901, Helena, MT 59620-0901. (History: 75-11-319, MCA; IMP, 75-11-308, 75-11-319, MCA; NEW, 1995 MAR p. 2491, Eff. 11/23/95.)

17.57.105 DESIGN, CONSTRUCTION AND INSTALLATION STANDARDS  
FOR ALL ABOVEGROUND DOUBLE-WALLED PETROLEUM STORAGE TANK SYSTEMS

(1) All aboveground double-walled petroleum storage tank systems owned or operated by persons that want to qualify for a reduced deductible allowed by the statutes and rules governing the Montana petroleum tank release cleanup fund must be designed and constructed in accordance with the following standards:

(a) Aboveground petroleum storage tank systems shall consist of either shop-fabricated double-walled storage tanks or petroleum storage tanks installed in a vault or special enclosure as required by UFC 5202.3.6 and Appendix II-F (these assemblies may be referred to in this rule as "protected systems"), and any integral double-walled piping shall meet the requirements of this section at the time of construction and installation.

(b) Storage tank systems must be constructed of materials that are compatible with the petroleum product stored in the system.

(c) In addition to secondary containment as required by (1)(i) of this rule, petroleum storage tanks must be designed and constructed to meet any of the following standards:

(i) aboveground storage tanks constructed of steel shall meet or exceed the requirements of UL No. 142, API Standard No. 620, API Standard No. 650, API Standard No. 12D or API Standard No. 12F;

(ii) aboveground storage tanks constructed of materials other than steel must not be installed unless such materials have received the written approval of the department of justice fire prevention and investigation bureau. Where required (e.g., "Motor Vehicle Fuel-Dispensing Stations"), protected systems must be listed in UL 2085, UFC Standard 79-7, the southwest research institute (SwRI), or any other testing agency approved by the state fire marshal.

(d) Tanks must be located and supported in accordance with the requirements of Uniform Fire Code Articles 52, 79 and Appendix II-F.

(e) The bottom of metal tanks that rest on or within the soil must be cathodically protected with sacrificial anodes or an impressed current system designed, constructed and installed in accordance with API RP 651 and NACE Standard Number RP-0285-95, and:

(i) a corrosion expert must design and supervise the installation of impressed current cathodic protection systems;

(ii) each cathodic protection system must have a test station or a monitoring method that enables the owner or operator to ensure cathodic protection.

(f) Exterior coatings must be designed and applied to storage tank systems to prevent corrosion and deterioration and to protect against degradation by ultraviolet light.

(g) All integral piping, including bulk product piping and hydrant piping, must be constructed with secondary containment as provided in (1)(i) of this rule. All integral piping systems must be constructed in accordance with accepted engineering principles and Uniform Fire Code Articles 52, 79 and Appendix II-F. Integral piping must be constructed of one or more of the following materials and in accordance with the following standards:

(i) cathodically protected coated steel in accordance with UFC Article 79, API RP 1615, API RP 1632, NACE RP-0169-83 and NACE RP-0285-85 or STI R892-89;

(ii) non-metallic pipe (e.g., approved PVC and/or fiberglass) must not be installed as primary aboveground piping unless it satisfies the 2-hour fire protection requirement for tank assemblies in accordance with Uniform Fire Code Articles 52, 79 and Appendix II-F.

(h) Storage tank systems with a capacity of 660 gallons or less used to store heating oil for consumptive use on the premises where stored must be designed, constructed, and installed in accordance with the secondary containment requirements of UFC 7901.8, the Uniform Mechanical Code, NFPA 31, and (1)(i) of this rule. In addition, installation of such storage tank systems must be completed in accordance with the requirements of all local fire code and building code ordinances.

(i) For the purposes of this chapter, secondary containment of petroleum storage tank systems must be designed and constructed as follows:

(i) Shop-fabricated storage tanks must be designed and constructed with rigid inner and outer walls separated by an interstitial space that is capable of being monitored for a release. The interstice must be designed to direct any release to a monitoring point or points and must be provided with an emergency vent equal in size to the emergency vent on the primary tank;

(ii) Piping must be designed and constructed with a rigid inner and outer wall separated by an interstitial space that is capable of being monitored for a release. Primary (i.e., product conveying) piping must be constructed only of approved metallic material;

(iii) Vaults and special enclosures must be designed and constructed in accordance with UFC 5202.3.6 or Appendix II-F, and the owner or operator must submit plans for approval to the department of justice fire prevention and investigation bureau prior to installation; and

(iv) For the purposes of this rule, the use of clay-based composite products, off-site natural clays or synthetic liners does not satisfy the definition of double-walled or secondary containment construction and is strictly prohibited. Concrete

and/or concrete composite material constructed in accordance with accepted engineering principles and listed as a system that provide 2-hour fire protection in accordance with requirements of the uniform fire code, such as vaulted or special enclosure systems, shall satisfy the definition of "double-walled" and "secondary-containment".

(2) Catchment pans and sumps must be installed under dispensers.

(3) Tanks, piping and ancillary equipment must be protected from tampering and damage by fences and barriers.

(4) Tanks with a capacity greater than 1,100 gallons must be equipped with equipment which prevents the tank from being overfilled or a high-level alarm which alerts the transport operator to stop product flow in time to prevent the tank from being overfilled. (History: 75-11-319, MCA; IMP, 75-11-308, 75-11-319, MCA; NEW, 1995 MAR p. 2491, Eff. 11/23/95.)

17.57.106 INSTALLATION OF ABOVEGROUND DOUBLE-WALLED PETROLEUM STORAGE SYSTEMS (1) All aboveground double-walled petroleum storage tank systems must be properly installed in accordance with:

(a) the manufacturer's specifications and/or recommendations;

(b) the appropriate recommended practices adopted by reference in ARM 17.57.104; and

(c) Uniform Fire Code Articles 52, 79 and Appendix II-F, or when applicable, the Uniform Mechanical Code and NFPA 31, and all local fire code and building code ordinances.

(2) Vaults and special enclosures must be installed in accordance with Uniform Fire Code Articles 52, 79 and Appendix II-F, and the conditions set forth in the written approval provided by the department of justice fire prevention and investigation bureau or the local fire official with Uniform Fire Code jurisdiction. (History: 75-11-319, MCA; IMP, 75-11-308, 75-11-319, MCA; NEW, 1995 MAR p. 2491, Eff. 11/23/95.)

17.57.107 GENERAL RELEASE DETECTION STANDARDS (1) As part of an aboveground double-walled petroleum storage tank system's design covered under this chapter, an owner and an operator shall provide a method, or a combination of methods, of release detection that monitors the storage tank system's interstitial space at intervals of not less than every 30 days. (History: 75-11-319, MCA; IMP, 75-11-308, 75-11-319, MCA; NEW, 1995 MAR p. 2491, Eff. 11/23/95.)

